

[illegible]

SYSMTACCESS
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D 14
- Routine to check magnetic tape accessi 16-SEP-1984 02:05:17 VAX/VMS Macro V04-00

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(1)	66	Declarations
(1)	99	Entry vector
(1)	131	Main routine

```
0000 1 .TITLE SYSMTACCESS - Routine to check magnetic tape accessibility
0000 2 .IDENT 'V04-000'
0000 3
0000 4 *****
0000 5
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0000 23
0000 24 *****
0000 25
0000 26
0000 27 ++
0000 28 FACILITY: VMS Executive, System services.
0000 29
0000 30 ABSTRACT:
0000 31
0000 32 VMS supplied accessibility installation routine. This routine is a
0000 33 model on which installations' should base their accessibility
0000 34 routine. It is also the system default installation routine.
0000 35
0000 36
0000 37 ENVIRONMENT:
0000 38
0000 39 Kernel Mode
0000 40
0000 41 AUTHOR:
0000 42
0000 43 Meg Dumont
0000 44
0000 45 CREATION DATE:
0000 46
0000 47 20-February-1984
0000 48
0000 49 MODIFIED BY:
0000 50
0000 51 V03-004 MMD0316 Meg Dumont, 22-Jul-1984 19:21
0000 52 Fix to V4 checks to restore R0 after the CMPC operation.
0000 53
0000 54 V03-003 MMD0266 Meg Dumont, 22-Mar-1984 16:30
0000 55 Change LABEL to LBLNAM and a couple other misc fixes
0000 56 to V4 support.
0000 57
```


SYSMTACCESS
V04-000

- Routine to check magnetic tape accessi F 14
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5-SEP-1984 03:55:45 [SYS.SRC]SYSMTACC.MAR;1

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(1)

0000	58 :	V03-002 MMD0257	Meg Dumont,	7-Mar-1984 18:38
0000	59 :	Fix CASE statements.		
0000	60 :			
0000	61 :	V03-001 MMD0253	Meg Dumont,	28-Feb-1984 16:57
0000	62 :	Delete temporary definitions.		
0000	63 :			
0000	64 :--			

```
0000 66      .SBTTL  Declarations
0000 67      $MTADEF
0000 68      $VL1DEF      ; ANSI volume label definitions
0000 69      $HD1DEF      ; ANSI header 1 label defs
0000 70      $SSDEF       ; Define status codes
0000 71
0000 72      ; Equated symbols:
0000 73
00000004 0000 74      LBLNAM  = 4      ; Offset to the label passed either
0000 75      ; a VOL1 or HDR1 depending on the type
0000 76      ; passed by address
00000008 0000 77      UIC      = 8      ; Offset to UIC of user doing operation,
0000 78      ; passed by value
0000000C 0000 79      STD_VERSION = 12  ; Offset to decimal equivalent of the
0000 80      ; ANSI std verison number from VOL1
0000 81      ; label passed by value
00000010 0000 82      ACCESS_CHAR = 16  ; Offset to the access char specified
0000 83      ; by user valid label is being output
0000 84      ; passed by value
00000014 0000 85      ACCESS_SPEC = 20  ; Offset to field which indicates if the
0000 86      ; user specified a access char passed
0000 87      ; by value
00000018 0000 88      TYPE      = 24  ; Offset to type of operation. See
0000 89      ; $MTADEF for types, passed by value
0000 90
0000 91      ; Local symbols
0000 92
00000020 0000 93      BLANK = ^X<20>      ; Hex equivalent of a blank
00000031 0000 94      ASCII_1 = ^X<31>    ; Hex equivalent of an ASCII one.
0000 95
41 31 31 45 4C 49 46 43 45 44 0000 96 STARID: .ASCII /DECFILE11A/ ; VMS specific implementation identifier
000A 97
```



```
000A 99 .SBTTL Entry vector
000A 100 :+
000A 101 : The following vectors are used by the various pieces of the system
000A 102 : to access the accessibility routine. The vector EXESMTACCESS is
000A 103 : used by the change mode dispatcher in response to a user calling the
000A 104 : SMTACCESS system service. This vector then jumps to the actual dispatch
000A 105 : vector, EXESMTACCESS_VEC, which in turn will jump to the accessibility
000A 106 : routine. This level of indirection is necessary because the
000A 107 : change mode dispatch vector must be in close proximity to the change
000A 108 : mode dispatcher, which implies that it must be in a read-only psect.
000A 109 : The actual dispatch vector, EXESMTACCESS_VEC, must be in a writable
000A 110 : psect so that the contents of the vector may be changed.
000A 111 :
000A 112 : The longword SGN$GL_LOADFLAGS is a bit vector used to indicate which
000A 113 : pieces of the loadable pieces of the EXEC should be loaded at system
000A 114 : boot time. If a user specified an accessibility routine is
000A 115 : present in the system, the bit SGN$V_LOADMTACCESS will be set to 1.
000A 116 :
000A 117 : The vector address the user must specify to load the code is represented
000A 118 : by the symbol EXESMTACCESS_VEC.
000A 119 :
000A 120 :-
000A 121 :
00000000 122 .PSECT AEXENONPAGED ; Nonpaged UR access only
0000 123 EXESMTACCESS:: ; Entry point from change-mode dispat.
0000 124 .WORD 0 ; Register save mask (none saved)
00000000'9F 17 0002 125 JMP @#EXESMTACCESS_VEC ; Jump to the dispatch vector
0000 126
00000000 127 .PSECT $$$500 ; The vector must be nonpaged and URKW
0000 128 EXESMTACCESS_VEC:: ; Quick access entry point
00000000'9F 17 0000 129 JMP @#EXESMTACCESS_RTN ; Vector to default routine
```

```
0006 131 .SBTTL Main routine
0006 132 :++
0006 133 :$MTACCESS
0006 134 :
0006 135 :Functional description:
0006 136 :This routine is called to handle the VOL1 and HDR1 label accessibility
0006 137 :fields during magnetic tape label processing. It firsts determines
0006 138 :the ANSI standard verison of this tape. For version 3 or less tapes the
0006 139 :routiene will either output a blank or the character specified by the
0006 140 :user. On input of version 3 or less tapes the routine will check for a
0006 141 :blank and return the value $$$_FILACCERR if the field is non-blank.
0006 142 :
0006 143 :For version 4 tapes, on output the routine will either output the
0006 144 :character specified or an ASCII 1 if no character was specified.
0006 145 :On input of version 4 tapes, if the field is blanks then R0 is
0006 146 :set to 0, which means the user has complete access to the tape.
0006 147 :If the field has an ASCII one then $$$_NORMAL is returned and
0006 148 :which means VMS protection will be checked by the caller. If the
0006 149 :field contains something else then $$$_FILACCERR is returned and
0006 150 :VMS protection is checked. This routine does not use the
0006 151 :returnd $$$_NOVOLACC or $$$_NOFILACC, however the installation is
0006 152 :free to use them and the caller will know how to deal with them.
0006 153 :
0006 154 :Calling sequence:
0006 155 :
0006 156 :This routine should be called via a CALLS/G to EXE$MTACCESS.
0006 157 :
0006 158 :Input:
0006 159 :
0006 160 :LBLNAM(AP) : The ANSI label to process passed by address.
0006 161 :On input the label passed is either the VOL1
0006 162 :or HDR1 label read off the magnetic tape. On
0006 163 :output of labels this field is zero. The
0006 164 :type of label is determined by the TYPE field.
0006 165 :
0006 166 :UIC(AP) : The volme UIC passed by value.
0006 167 :
0006 168 :STD_VERSION(AP) : The decimal equivalent of the ANSI standard
0006 169 :version gotten from the VOL1 label, passed
0006 170 :by value.
0006 171 :
0006 172 :ACCESS_CHAR(AP) : The accessibility character specified by the
0006 173 :user, passed by value. For output of labels
0006 174 :only.
0006 175 :
0006 176 :ACCESS_SPEC(AP) : Determines if the character passed in ACCESS_CHAR
0006 177 :was specified by user.
0006 178 :MTASK_CHARVALID = YES
0006 179 :MTASK_NOCHAR = NO
0006 180 :passed by value. For output of labels only.
0006 181 :
0006 182 :TYPE(AP) : Type of accessibility to process passed by value.
0006 183 :MTASK_INVOL1 = Input a VOL1 label
0006 184 :MTASK_INHDR1 = Input a HDR1 label
0006 185 :MTASK_OUTVOL1 = Output a VOL1 label
0006 186 :MTASK_OUTHDR1 = Output a HDR1 label
0006 187 :
```



```
0006 188 : Output:
0006 189 :
0006 190 :     None.
0006 191 :
0006 192 : Routine value:
0006 193 :
0006 194 :     On label INPUT the following is returned:
0006 195 :
0006 196 :     R0 = SSS_NORMAL      : Check the VMS protection on the magnetic tape.
0006 197 :         0                : Give the user full access. VMS protection is
0006 198 :                           : no checked.
0006 199 :     SSS_FILACCERR       : Check for explicit override then check the
0006 200 :                           : VMS protection.
0006 201 :     SSS_NOFILACC or SSS_NOVOLACC : The user has no access to the file
0006 202 :                                   of volume, respectively.
0006 203 :
0006 204 :     When the label is OUTPUT the accessibility character to write is
0006 205 :     returned in R0.
0006 206 :
0006 207 : --
0006 208 :
00000000 209 .PSECT Y$EXEPAGED ; This code is pageable
0000 210
0000 211 EXESMTACCESS RTN:: ; $MTACCESS code
52 50 01 3C 0000 212 MOVZWL #SS$ NORMAL,R0 ; Assume success.
51 04 AC D0 0003 213 MOVL LBLNAM(AP),R2 ; Get address of label to process
51 18 AC 9A 0007 214 MOVZBL TYPE(AP),R1 ; Get type of request
000B 215
000B 216 ASSUME MTASK_INVOL1 EQ 0
000B 217 ASSUME MTASK_INHDR1 EQ 1
000B 218 ASSUME MTASK_OUTVOL1 EQ 2
000B 219 ASSUME MTASK_OUTHDR1 EQ 3
000B 220
03 0C AC 91 000B 221 CMPB STD_VERSION(AP),#3 ; If GTR then process with 4 rules
32 14 000F 222 BGTR ACCESS_V4
0011 223
0011 224 ; Process accessibility with the rules used for ANSI standard version 3 or less
0011 225 ; magnetic tapes.
0011 226
0011 227 ACCESS_PREV4:
0011 228 CASE
0011 229     R1,<-
0011 230     PREV4_INVOL1,-
0011 231     PREV4_INHDR1,-
0011 232     PREV4_OUTVOL1,-
0011 233     PREV4_OUTHDR1,-
0011 234     >
04 001D 235 RET
001E 236 PREV4_INVOL1:
0A A2 20 91 001E 237 CMPB #BLANK,VL1$B_VOLACCESS(R2) ; If blank then return check VMS pro
05 13 0022 238 BEQL 10$
50 009C 8F 3C 0024 239 MOVZWL #SS$_FILACCERR,R0 ; Else force override of field
04 0029 240 10$: RET
002A 241
002A 242 PREV4_INHDR1:
35 A2 20 91 002A 243 CMPB #BLANK,HD1$B_FILACCESS(R2) ; If blank then return check VMS pro
05 13 002E 244 BEQL 10$
```

```

50 009C 8F 3C 0030 245      MOVZWL #SS$_FILACCERR,R0      ; Else force override of field
    04 0035 246 10$: RET
    0036 247
    0036 248      ASSUME MTASK_CHARVALID EQ 1
    0036 249      ASSUME MTASK_NOCHAR EQ 0
    0036 250
    0036 251 PREV4_OUTVOL1:
    0036 252 PREV4_OUTHDR1:
50 10 AC 9A 0036 253      MOVZBL ACCESS_CHAR(AP),R0      ; Assume char valid
    14 AC 95 003A 254      TSTB ACCESS_SPEC(AP)          ; If NEQ then character passed
    03 12 003D 255      BNEQ 10$
    50 20 9A 003F 256      MOVZBL #BLANK,R0              ; Else return a blank
    04 0042 257 10$: RET
    0043 258

```



```
0043 260 ACCESS_V4:
0043 261     CASE
0043 262     R1,<-
0043 263     V4_INVOL1,-
0043 264     V4_INHDR1,-
0043 265     V4_OUTVOL1,-
0043 266     V4_OUTHDR1,-
0043 267     >
04 004F 267     RET
0050 268
0050 269 V4_INVOL1:
0A A2 20 91 0050 270     CMPB     #BLANK,VL1$B_VOLACCESS(R2)      ; If blank give user full access
03 12 0054 271     BNEQ     10$
50 D4 0056 272     CLRL     R0
04 0058 273     RET
0059 274
0A A2 31 91 0059 275 10$:     CMPB     #ASCII_1,VL1$B_VOLACCESS(R2)    ; If NEQ force the user to
0B 12 005D 276     BNEQ     20$      ; override the field
18 A2 00000000'EF 0A 29 005F 277     CMPC3    #10,STARID,VL1$T_SYSCODE(R2) ; If EQL then ok
06 13 0068 278     BEQL     V4_NORMAL
50 009C 8F 3C 006A 279 20$:     MOVZWL   #$$$_FILACCERR,R0      ; Else force override
04 006F 280     RET
0070 281
0070 282 ; The CMPC operation destroys R0 so we must set the value before we
0070 283 ; return to the user.
0070 284 V4_NORMAL:
50 01 3C 0070 285     MOVZWL   #$$$_NORMAL,R0
04 0073 286     RET
0074 287
0074 288 V4_INHDR1:
35 A2 20 91 0074 289     CMPB     #BLANK,HD1$B_FILACCESS(R2)    ; If blank give user full access
03 12 0078 290     BNEQ     10$
50 D4 007A 291     CLRL     R0
04 007C 292     RET
007D 293
007D 294 10$:     CMPB     #ASCII_1,HD1$B_FILACCESS(R2)    ; If NEQ force the user to
0B 12 0081 295     BNEQ     20$      ; override the field
3C A2 00000000'EF 0A 29 0083 296     CMPC3    #10,STARID,HD1$T_SYSCODE(R2) ; If EQL then ok
E2 13 008C 297     BEQL     V4_NORMAL
50 009C 8F 3C 008E 298 20$:     MOVZWL   #$$$_FILACCERR,R0      ; Else force override
04 0093 299     RET
0094 300
0094 301
0094 302 V4_OUTVOL1:
0094 303 V4_OUTHDR1:
50 10 AC 9A 0094 304     MOVZBL   ACCESS_CHAR(AP),R0      ; Assume char valid
14 AC 95 0098 305     TSTB     ACCESS_SPEC(AP)      ; If NEQ then character passed
03 12 009B 306     BNEQ     10$
50 31 9A 009D 307     MOVZBL   #ASCII_1,R0      ; Else return default character
04 00A0 308 10$:     RET
00A1 309
00A1 310     .END
```

SYSMTACCESS
Symbol table

M 14
- Routine to check magnetic tape accessi 16-SEP-1984 02:05:17 VAX/VMS Macro V04-00
5-SEP-1984 03:55:45 [SYS.SRC]SYSMTACC.MAR;1

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ACCESS_CHAR	= 00000010		
ACCESS_PREV4	= 00000011	R	05
ACCESS_SPEC	= 00000014		
ACCESS_V4	= 00000043	R	05
ASCII_T	= 00000031		
BLANK	= 00000020		
EXESMTACCESS	= 00000000	RG	03
EXESMTACCESS_RTN	= 00000000	RG	05
EXESMTACCESS_VEC	= 00000000	RG	04
HD1\$B_FILACCESS	= 00000035		
HD1\$T_SYSCODE	= 0000003C		
LBLNAM	= 00000004		
MTASK_CHARVALID	= 00000001		
MTASK_INHDR1	= 00000001		
MTASK_INVOL1	= 00000000		
MTASK_NOCHAR	= 00000000		
MTASK_OUTHDR1	= 00000003		
MTASK_OUTVOL1	= 00000002		
PREV4_INHDR1	= 0000002A	R	05
PREV4_INVOL1	= 0000001E	R	05
PREV4_OUTHDR1	= 00000036	R	05
PREV4_OUTVOL1	= 00000036	R	05
SS\$_FILACCERR	= 0000009C		
SS\$_NORMAL	= 00000001		
STARID	= 00000000	R	01
STD_VERSION	= 0000000C		
TYPE	= 00000018		
UIC	= 00000008		
V4_INHDR1	= 00000074	R	05
V4_INVOL1	= 00000050	R	05
V4_NORMAL	= 00000070	R	05
V4_OUTHDR1	= 00000094	R	05
V4_OUTVOL1	= 00000094	R	05
VL1\$B_VOLACCESS	= 0000000A		
VL1\$T_SYSCODE	= 00000018		

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
. BLANK .	0000000A (10.)	01 (1.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
\$ABSS	00000000 (0.)	02 (2.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
AEXENONPAGED	00000008 (8.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
\$\$\$500	00000006 (6.)	04 (4.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE
Y\$EXEPAGED	000000A1 (161.)	05 (5.)	NOPIC USR CON REL LCL NOSHR EXE RD WRT NOVEC BYTE

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.07	00:00:00.97
Command processing	106	00:00:00.58	00:00:04.36

SYSMTACCESS
VAX-11 Macro Run Statistics

N 14
- Routine to check magnetic tape accessi 16-SEP-1984 02:05:17 VAX/VMS Macro V04-00
5-SEP-1984 03:55:45 [SYS.SRC]SYSMTACC.MAR;1

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Pass 1	225	00:00:04.86	00:00:18.49
Symbol table sort	0	00:00:00.67	00:00:01.55
Pass 2	71	00:00:01.08	00:00:02.34
Symbol table output	5	00:00:00.04	00:00:00.06
Psect synopsis output	2	00:00:00.04	00:00:00.04
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	440	00:00:07.34	00:00:27.81

The working set limit was 1350 pages.

25956 bytes (51 pages) of virtual memory were used to buffer the intermediate code.

There were 30 pages of symbol table space allocated to hold 473 non-local and 12 local symbols.

310 source lines were read in Pass 1, producing 18 object records in Pass 2.

13 pages of virtual memory were used to define 12 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name

Macros defined

_ \$255\$DUA28:[SYS.OBJ]LIB.MLB;1
_ \$255\$DUA28:[SYSLIB]STARLET.MLB;2
TOTALS (all libraries)

3
6
9

538 GETS were required to define 9 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:SYSMTACC/OBJ=OBJ\$:SYSMTACC MSRC\$:SYSMTACC/UPDATE=(ENH\$:SYSMTACC)+EXECML\$/LIB

0386 AH-BT13A-SE
VAX/VMS V4.0

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